

Claims

1. A wave soldering tank comprising a soldering tank body for housing molten solder, a solder feed chamber disposed within the soldering tank body and 5 having an inlet disposed below the level of molten solder and an outlet disposed above the level of molten solder in the soldering tank body, characterized in that a multiple-blade screw-type pump is disposed in the inlet so as to draw molten solder into the solder feed chamber through the inlet and discharge molten solder through the outlet.

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2. A wave soldering tank as claimed in claim 1, wherein the pump includes an impeller comprising a rotatable hub and a plurality of helical blades secured to the hub at equal intervals in the circumferential direction of the hub, each of the blades overlapping an adjoining one of the blades when the blades are 15 viewed in the axial direction of the impeller.

3. A wave soldering tank as claimed in claim 1 wherein the pump includes an impeller and the impeller comprises four helical blades provided in an equal interval, each blade extending around the hub by at least  $120^\circ$  between first 20 and second ends of the blade.

4. A wave soldering tank as claimed in claim 1 wherein the pump includes an impeller and the impeller comprises a plural of helical blades, and each of the helical blades is sloped by at most  $45^\circ$  with respect to a plane 25 perpendicular to the axis of the hub.

5. A wave soldering tank as claimed in claim 1 wherein the solder feed chamber comprises a partition which divides the interior of the soldering tank

body into an upper and lower portion, the inlet comprises an opening formed in the partition, and the pump includes a cylindrical casing disposed in the inlet and surrounding the impeller, the impeller being rotatably disposed in the casing so as to transport molten solder in an axial direction of the casing.

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6. A wave soldering tank as claimed in claim 5 wherein the solder feed chamber includes a duct which extends upwards from the partition and an outlet disposed at an upper end of the duct and extending above the level of molten solder in the soldering tank body.

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7. A wave soldering tank as claimed in claim 5 wherein the lower end of the impeller extends 5 - 10 mm longer than the casing.

15 8. A wave soldering tank as claimed in claim 5 wherein the clearance between the casing and the impeller is 0.1 - 1 mm.